



Search **Nucleotide** for

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Details

Range: from  to

☐ Reverse complemented strand

Features:

☐ SNP

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☒ MGC

☐ HPRD

☐ 1: [Z49227](#). Reports A.thaliana mRNA f...[gi:6469339]

[Links](#)

LOCUS ATANTMR 2181 bp mRNA linear PLN 26-NOV-1999  
DEFINITION A.thaliana mRNA for adenine nucleotide translocase.  
ACCESSION Z49227  
VERSION Z49227.2 GI:6469339  
KEYWORDS adenine nucleotide translocase.  
SOURCE Arabidopsis thaliana (thale cress)  
ORGANISM Arabidopsis thaliana  
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;  
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;  
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.  
REFERENCE 1  
AUTHORS Kampfenkel,K., Mohlmann,T., Batz,O., Van Montagu,M., Inze,D. and  
Neuhaus,H.E.  
TITLE Molecular characterization of an Arabidopsis thaliana cDNA encoding  
a novel putative adenylate translocator of higher plants  
JOURNAL FEBS Lett. 374 (3), 351-355 (1995)  
MEDLINE 96069943  
PUBMED 7589569  
REMARK (sites)  
REFERENCE 2  
AUTHORS Kampfenkel,K.K.  
TITLE Direct Submission  
JOURNAL Submitted (05-MAY-1995) Kampfenkel K.K., Universiteit Gent,  
Laboratorium voor Genetika, K.L. Ledeganckstraat 35, Gent, Belgium,  
B-9000 Gent  
REMARK revised by [3]  
REFERENCE 3 (bases 1 to 2181)  
AUTHORS Kampfenkel,K.K.  
TITLE Direct Submission  
JOURNAL Submitted (26-NOV-1999) Kampfenkel K.K., Universiteit Gent,  
Laboratorium voor Genetika, K.L. Ledeganckstraat 35, Gent, Belgium,  
B-9000 Gent  
COMMENT On Nov 27, 1999 this sequence version replaced gi:1051108.  
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## ORIGIN

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2101 tagtctgtag ctttttttcc ttacattctt ttcagttcaa tgtggtttca cgttctaagt
2161 ttcttctcaa aaaaaaaaaa a
```

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Jan 27 2005 17:14:21

## Refine Search

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Terms	Documents
L4 and plastidial	0

Database: 
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 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search: L8





### Search History

DATE: Friday, January 28, 2005   [Printable Copy](#)   [Create Case](#)

#### Set Name   Query

side by side

*DB=USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=OR*

L8   L4 and plastidial

L7   L4 and plastid

L6   L4 and plant

L5   L4 and Arabidopsis

L4   ATP/ADP or ADP/ATP and transformation

*DB=USPT; PLUR=YES; OP=OR*

L3   L1 and translocator.clm.

L2   L1 and translocator.clm.

L1   ATP/ADP adj (translocator or transporter) and transformation and plant

#### Hit Count   Set Name

result set

0   L8

7   L7

54   L6

13   L5

131   L4

2   L3

0   L2

8   L1

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NEWS 6 DEC 01 LISA now available on STN  
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NEWS 8 DEC 15 MEDLINE update schedule for December 2004  
NEWS 9 DEC 17 ELCOM reloaded; updating to resume; current-awareness  
alerts (SDIs) affected  
NEWS 10 DEC 17 COMPUAB reloaded; updating to resume; current-awareness  
alerts (SDIs) affected  
NEWS 11 DEC 17 SOLIDSTATE reloaded; updating to resume; current-awareness  
alerts (SDIs) affected  
NEWS 12 DEC 17 CERAB reloaded; updating to resume; current-awareness  
alerts (SDIs) affected  
NEWS 13 DEC 17 THREE NEW FIELDS ADDED TO IFIPAT/IFIUDB/IFICDB  
NEWS 14 DEC 30 EPFULL: New patent full text database to be available on STN  
NEWS 15 DEC 30 CAPLUS - PATENT COVERAGE EXPANDED  
NEWS 16 JAN 03 No connect-hour charges in EPFULL during January and  
February 2005  
NEWS 17 JAN 26 CA/CAPLUS - Expanded patent coverage to include the Russian  
Agency for Patents and Trademarks (ROSPATENT)  
  
NEWS EXPRESS JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005  
  
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FULL ESTIMATED COST	0.21	0.21

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FILE 'BIOSIS' ENTERED AT 14:36:34 ON 28 JAN 2005

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=> s (ADP/ATP or ATP/ADP) and (translocator or transporter) and plant and transform?

'ATP' IS NOT A VALID FIELD CODE

'ADP' IS NOT A VALID FIELD CODE

'ATP' IS NOT A VALID FIELD CODE

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'ATP' IS NOT A VALID FIELD CODE

'ADP' IS NOT A VALID FIELD CODE

L1 0 (ADP/ATP OR ATP/ADP) AND (TRANSLOCATOR OR TRANSPORTER) AND PLANT AND TRANSFORM?

=> s (ATP(w)translocator or ADP(w)translocator) or (atp(w)transporter or adp(w)transporter) and plant and transform?

L2 308 (ATP(W) TRANSLOCATOR OR ADP(W) TRANSLOCATOR) OR (ATP(W) TRANSPORTER OR ADP(W) TRANSPORTER) AND PLANT AND TRANSFORM?

=> s ((ATP(w)translocator or ADP(w)translocator) or (atp(w)transporter or adp(w)transporter)) and plant and transform?

L3 9 ((ATP(W) TRANSLOCATOR OR ADP(W) TRANSLOCATOR) OR (ATP(W) TRANSPORTER OR ADP(W) TRANSPORTER)) AND PLANT AND TRANSFORM?

=> d l3 1-9 ti

L3 ANSWER 1 OF 9 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

TI The N-terminal extension of the ADP- \*\*\*ATP\*\*\* \*\*\*translocator\*\*\* is not involved in targeting to \*\*\*plant\*\*\* mitochondria in vivo.

L3 ANSWER 2 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
 TI Structural and functional implications of the instability of the ADP/  
 \*\*\*ATP\*\*\* \*\*\*transporter\*\*\* purified from mitochondria as revealed  
 by FTIR spectroscopy.

L3 ANSWER 3 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
 TI The secondary structure of the inhibited mitochondrial ADP/ \*\*\*ATP\*\*\*  
 \*\*\*transporter\*\*\* from yeast analyzed by FTIR spectroscopy.

L3 ANSWER 4 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
 TI Altered plastidic ATP/ \*\*\*ADP\*\*\* - \*\*\*transporter\*\*\* activity  
 influences potato (*Solanum tuberosum* L.) tuber morphology, yield and  
 composition of tuber starch.

L3 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
 TI Occurrence of two plastidic ATP/ \*\*\*ADP\*\*\* \*\*\*transporters\*\*\* in  
*Arabidopsis thaliana* L molecular characterisation and comparative  
 structural analysis of similar ATP/ \*\*\*ADP\*\*\* \*\*\*translocators\*\*\*  
 from plastids and *Rickettsia prowazekii*.

L3 ANSWER 6 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
 TI Cloning of the gene encoding the mitochondrial adenine nucleotide carrier  
 of *Schizosaccharomyces pombe* by functional complementation in  
*Saccharomyces cerevisiae*.

L3 ANSWER 7 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
 TI The N-terminal extension of the ADP/ \*\*\*ATP\*\*\* \*\*\*translocator\*\*\*  
 is not involved in targeting to \*\*\*plant\*\*\* mitochondria in vivo.

L3 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Transgenic \*\*\*plants\*\*\* with increased starch and/or oil production  
 expressing the *Arabidopsis thaliana* plastidial ADP/ \*\*\*ATP\*\*\*  
 \*\*\*translocator\*\*\*

L3 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI The N-terminal extension of the ADP/ \*\*\*ATP\*\*\* \*\*\*translocator\*\*\*  
 is not involved in targeting to \*\*\*plant\*\*\* mitochondria in vivo

=> d 13 4 5 8 ibib ab

L3 ANSWER 4 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
 ACCESSION NUMBER: 1999:67822 BIOSIS  
 DOCUMENT NUMBER: PREV199900067822  
 TITLE: Altered plastidic ATP/ \*\*\*ADP\*\*\* - \*\*\*transporter\*\*\*  
 activity influences potato (*Solanum tuberosum* L.) tuber  
 morphology, yield and composition of tuber starch.  
 AUTHOR(S): Tjaden, Joachim; Moehlmann, Torsten; Kampfenkel, Karlheinz;  
 Henrichs, Gudrun; Neuhaus, H. Ekkehard [Reprint author]  
 CORPORATE SOURCE: Pflanzenphysiol., Fachbereich Biol./Chem., Univ.  
 Osnabrueck, Barbarastr. 11, D-49069, Osnabrueck, Germany  
 SOURCE: Plant Journal, (Dec., 1998) Vol. 16, No. 5, pp. 531-540.  
 print.  
 ISSN: 0960-7412.  
 DOCUMENT TYPE: Article  
 LANGUAGE: English

ENTRY DATE: Entered STN: 16 Feb 1999  
Last Updated on STN: 16 Feb 1999

AB The metabolic function of the plastidic ATP/ \*\*\*ADP\*\*\*  
\*\*\*transporter\*\*\* (AATP) in heterotrophic plastids was examined in  
transgenic potato \*\*\*plants\*\*\* that exhibited increased or decreased  
amounts of the protein. Altered mRNA levels correlated with activities of  
the plastidic ATP/ \*\*\*ADP\*\*\* \*\*\*transporter\*\*\*. Potato tubers with  
decreased plastidic ATP/ \*\*\*ADP\*\*\* \*\*\*transporter\*\*\* activities  
exhibited reduced starch contents whereas sense lines accumulated  
increased amounts of tuber starch. Starch from wild-type tubers had an  
amylose content of 18.8%, starch from antisense \*\*\*plants\*\*\* contained  
11.5-18.0% amylose, whereas starch from sense \*\*\*plants\*\*\* had levels  
of 22.7-27.0%. The differences in physiological parameters were  
accompanied with altered tuber morphology. These changes are discussed  
with respect to the stromal ATP supply during starch biosynthesis.

L3 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN  
ACCESSION NUMBER: 1998:175430 BIOSIS  
DOCUMENT NUMBER: PREV199800175430  
TITLE: Occurrence of two plastidic ATP/ \*\*\*ADP\*\*\*

\*\*\*transporters\*\*\* in *Arabidopsis thaliana* L molecular  
characterisation and comparative structural analysis of  
similar ATP/ \*\*\*ADP\*\*\* \*\*\*translocators\*\*\* from  
plastids and *Rickettsia prowazekii*.

AUTHOR(S): Moehlmann, Torsten; Tjaden, Joachim; Schwoeppe, Christian;  
Winkler, Herbert H.; Kampfenkel, Karlheinz; Neuhaus, H.  
Ekkehard [Reprint author]

CORPORATE SOURCE: Pflanzenphysiol., Univ. Osnabrueck, Barbarastr. 11, D-49069  
Osnabrueck, Germany

SOURCE: European Journal of Biochemistry, (March, 1998) Vol. 252,  
No. 3, pp. 353-359. print.  
CODEN: EJBCAI. ISSN: 0014-2956.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 20 Apr 1998  
Last Updated on STN: 20 Apr 1998

AB Recently, we sequenced a cDNA clone from *Arabidopsis thaliana* L. encoding  
an ATP/ \*\*\*ADP\*\*\* \*\*\*transporter\*\*\* protein (AATP1) located in the  
plastid envelope membrane. The deduced amino acid sequence of AATP1  
exhibits a high degree of similarity (>66%) to the ATP/ \*\*\*ADP\*\*\*  
\*\*\*transporter\*\*\* from the obligate intracellular gram-negative  
bacterium *Rickettsia prowazekii*. Here we report a second plastidic  
ATP/ADP carrier from *A. thaliana* (AATP2). As deduced from the amino acid  
sequence, AATP2 exhibits 77.6% identity to AATP1 and 36% to the  
*rickettsial* protein. Hydropathy analysis indicates that all three  
translocators are highly hydrophobic membrane proteins, which exhibit  
marked similarities and differences. The AATP1 translocator lacks the  
sixth transmembrane domain that is present in AATP2 and the bacterial  
transporter in *R. prowazekii*. In contrast to AATP1 and the bacterial  
transport protein, only AATP2 exhibits a truncated C-terminal end. To  
compare the general biochemical properties of AATP2 with the known  
transport properties of AATP1 we cloned the entire AATP2 cDNA into plasmid  
pJT118, leading to the presence of an additional N-terminal histidine tag  
of 10 amino acids. For heterologous expression of His10-AATP2 we chose  
the *Escherichia coli* strain C43, which was reported recently to allow  
overproduction of eukaryotic membrane transport proteins. After  
\*\*\*transformation\*\*\* and subsequent induction by isopropylthio-2-D-

galactopyranoside intact E. coli cells harbouring plasmid pJT118 showed import of radioactively labelled ATP and ADP. As deduced from a Lineweaver-Burk analysis His10-AATP2 exhibited apparent Km values for ATP and ADP of 22 µM and 20 µM, respectively. Import of ADP into His10-AATP2-expressing E. coli cells occurred at a rate of 24 nmol cntdot mg protein-1 cntdot h-1, which was about threefold faster than import of ATP. These biochemical characteristics are similar to transport properties of the heterologously expressed His10-AATP1 protein.

L3 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:736889 CAPLUS

DOCUMENT NUMBER: 132:942

TITLE: Transgenic \*\*\*plants\*\*\* with increased starch and/or oil production expressing the Arabidopsis thaliana plastidial ADP/ \*\*\*ATP\*\*\*  
\*\*\*translocator\*\*\*

INVENTOR(S): Neuhaus, Ekkehard; Moehlmann, Torsten;  
Graeve-Kampfenkel, Karl-Heinz; Tjaden, Joachim;  
Schell, Jozef; Martini, Norbert

PATENT ASSIGNEE(S): Planttec Biotechnologie G.m.b.H. Forschung &  
Entwicklung, Germany; Max-Planck-Gesellschaft Zur  
Forderung Der Wissenschaften E.V.

SOURCE: PCT Int. Appl., 60 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9958654	A2	19991118	WO 1999-EP3292	19990512
WO 9958654	A3	20000309		
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2328394	AA	19991118	CA 1999-2328394	19990512
AU 9942610	A1	19991129	AU 1999-42610	19990512
BR 9910408	A	20010109	BR 1999-10408	19990512
EP 1078088	A2	20010228	EP 1999-939765	19990512
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
JP 2002514412	T2	20020521	JP 2000-548445	19990512
PRIORITY APPLN. INFO.:			DE 1998-19821442	A 19980513
			WO 1999-EP3292	W 19990512

AB The invention relates to transgenic \*\*\*plant\*\*\* cells and \*\*\*plants\*\*\* which, compared to wild type cells or \*\*\*plants\*\*\*, exhibit an increased yield, esp. an increased oil and/or starch content, and which preferably synthesize a modified starch with increased amylose content. The described \*\*\*plants\*\*\* exhibit an increase or a decrease of the plastidial ADP/ \*\*\*ATP\*\*\* \*\*\*translocator\*\*\* activity as a



result of the \*\*\*transformation\*\*\* with Arabidopsis thaliana ADP/  
\*\*\*ATP\*\*\* \*\*\*translocator\*\*\* .

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